Telecommunications Electronic Reviews (TER)

ter

telecommunications

electronic reviews

Premiere Issue, Volume 1, Issue 1, 1994

Telecommunications Electronic Reviews (TER) is a publication of the Library and Information Technology Association.

Contents

ter issues (/lita/publications/archive/ter)

Whither TER?

by Thomas C. Wilson

Perhaps you are wondering what exactly is Telecommunications Electronic Reviews (TER). Well, so are we! If you have read the press release, then you will know some of what TER is intended to be. To a large degree TER is an experiment. The concept grew out of an attempt by members of the Telecommunications Interest Group of the Library and Information Technology Association to produce yet another book on the Internet--one with a somewhat more technical focus. The participants in this idea began to see that we didn't really need another traditional "book," but rather a book of books, an ongoing pointer resource for existing material, an evaluation tool, a gateway for all reader experience levels. It also occurred to us that it needed

to be free to respond quickly to new resources and free from artificial production constraints. We wanted to introduce readers to material about telecommunications and networking in all formats and to provide an avenue for advancing everyone's technical knowledge.

So how do we create this publication? Electronic, network production and distribution seemed a mandate. We also wanted the content to be helpful in guiding readers to material from the perspective of the quality of its content (traditional reviewing function), comparisons to other similar resources (sometimes present in traditional reviews), and reader experience level ratings (something new). In addition, we wanted to support the opportunity for multiple reviews of the same item, author and reader feedback, and thought-provoking commentary on the networking scene.

Well, there you have it. Now all we need to do is operationalize this concept. What you are reading is the first issue/attempt at achieving this goal. As editor-in-chief, I have struggled with the challenge between a predetermined size and the timeliness of production. Yes, our first issue perhaps is "virtually thin", but why wait until we have more if our mission is to put the information out there. More is to come in future issues.

There are also other issues related to electronic publication that we are certain to debate: issue numbering, pagination, citation formats, publication regularity, the list goes on. However, to wait until all of these are resolved before sending out the first issue seems at conflict with our purpose. We are an experiment, and we invite you to join in the process. What we need from you: your readership, your ideas, your reviews, your comments, your spirit! I invite your thoughts. You may reach me at: TWilson@uh.edu (mailto:TWilson@uh.edu).

Thomas C. Wilson, Editor-in-Chief TER

Review: OSI for Libraries: From Standards to Services. UDT Series on Data Communication Technologies and Standards for Libraries, Report #3. International Federation of Library Associations and Institutions Office for Universal Dataflow and Telecommunications. Ottawa, Canada, 1992.

by Pat Ensor

This third entry in a series of reports which aims to promote electronic transfer of data between libraries and between libraries and users provides a very useful overview of the components of Open Systems Interconnection and the issues involved with OSI implementation. The viewpoint of the report is somewhat biased, but it nonetheless gives the beginner a background for understanding OSI, which serves as the launching point for a number of current developments in libraries. Turner, Tallim, and Zeeman are internationally known in this field through their work with the National Library of Canada and the Z39.50 Implementors' Group.

The introduction of this 67-page report includes the goals and objectives of the report, and notes that after a number of years of existence, OSI has yet to have a significant impact on libraries. The report looks at where OSI was circa 1992, why it is still important and what can be done to further OSI implementation. As the report notes, "The report's overall objective is to provide those in the library community who are in the position of making decisions with an understanding of both the technical aspects of OSI and the critical organizational issues that must be considered in moving to an OSI environment." This reviewer will make the perhaps unfounded leap of thinking that the authors are aiming their work at technical novices, since they are explicitly tar- geting decision makers.

The second chapter defines OSI, giving the famous seven- layer Basic Reference Model, defining OSI terminology and standards, describing generic protocols for different functions, and showing benefits of using OSI applications. The third chapter defines functional standards, including profile definition, the international and national standards making process, and government procurement standards. The fourth chapter covers conformance testing for OSI, describing the scope of four different types of testing. Development testing is done informally using an existing test facility while a product is being developed. Conformance testing is more formal and involves testing the capabilities of the product to see that they conform with the standard. Interoperability testing is necessary to see that the product actually interworks properly with other conforming implementations of the standard. Arbitration testing is done when problems are encountered in communicating between two implementations.

The fifth chapter depicts telecommunication options for OSI, looking at full OSI telecommunications and TCP/IP telecommunica- tions. The sixth chapter, "Bridging the Technologies," is perhaps the most controversial section of the book as it includes a section called "TCP/IP vs. OSI: Is it an issue?" The authors do present an accurate picture of reality -- that full OSI implementation is just not happening, and TCP/IP is by far the most common telecommunications support system for OSI-type implementations. However, the decision maker they seek to inform could well be confused by the ideas contained in this chapter. The chapter depicts possible bridging mechanisms between TCP/IP and full OSI, then says that the longer term will probably be "OSI applications running on TCP/IP lower layers." It finishes, though, with a prediction that libraries will in essence be at the mercy of developments they don't control anyway!

The seventh chapter is very brief, and describes organizing for OSI. A longer chapter follows, describing existing projects and implementation strategies. The report's international scope is really shown by this chapter, which describes the United States' Linked Systems Project; the Z39.50 Implementors' Group, an entity which has participants from the United States, Canada, and the United Kingdom; and the National Library of Canada's ILL Protocol Implementation Program and SR Kernel Software Project, with which the authors are connected. From Europe, the Nordic SR-NET is described, in addition to German OSI projects, the OSI Interlending Network Project, and the Interlibrary Loan International Access Demonstration Project.

Four very brief chapters end the report, covering respectively the role of the "champion," education and promotion, getting started on crusading for OSI implementation, and a conclusion. The authors see a "champion" as essential in OSI development efforts--the champion, which can be an individual or organization, has a vision, initiates change, promotes it, and serves as a catalyst. These chapters give such potential proponents of OSI developments a place to start.

The report has only a couple of illustrations--the infamous seven-layer OSI reference model, and a comparison of OSI layers with TCP/IP implementation. It does, however, end with a list of references, a pretty extensive glossary for a brief report, and a list of acronyms.

Generally, this is a fairly clear, well written book. It should be understandable by novices, and it provides a good idea of the concepts behind Open Systems Interconnection. The descriptions provided of different projects are a special strength of the book. The utility of OSI and its relationship to telecommunications and library applications are areas that are also well covered.

Certainly a notable factor in considering this report's utility in 1994 is the fact that it was published in 1992. Although it probably did not have as long a lead time as a full-scale book, it still doesn't cite any resources later than 1991. However, for the kind of background that it provides very clearly, it is still quite valuable.

On the other hand, the authors could have gone a long way toward dealing with the undeniable fact that such information dates very quickly if they had included in their list of references and related materials some serial publications and other ongoing sources of information, such as discussion lists. Library Hi Tech is a good continuous source of information in this area, as becomes obvious in the report's article citations, but the report does not note the newsletter of the (U.S.) National Information Standards Organization, Information Standards Quarterly, as a source of information. [1,2] This reviewer, as editor of that publication, knows that it covers quite a bit of current information about Z39.50 developments, as well as international information standards, and has included material on OSI.

The one invaluable source of information about Z39.50 and related issues, however, is the Z39.50 Implementors' Group Internet discussion list (Z3950IW@NERVM.NERDC.UFL.EDU (mailto:Z3950IW@NERVM.NERDC.UFL.EDU)). Although it may not have been as active at the time this report was published as it is now, it did exist and was already an important source of information. This is the single best way to keep up with devel- opments in practical implementation in this area, and it is all the less understandable why authors that urge librarians to educate themselves on OSI and keep up with the issues would fail to mention it. (For more information about the Z39.50 Implementors Group, or ZIG, contact Mark Hinnebusch, Florida Center for Library Automation, as FCLMTH@NERVM.NERDC.UFL.EDU (mailto:FCLMTH@NERVM.NERDC.UFL.EDU)).

Anyone who does try to keep current on OSI, however, would quickly find themselves confused about the overall picture they may have absorbed from this report. Although the authors do acknowledge that TCP/IP is predominating as a telecommunications protocol for OSI-type implementations, they also state that we should be fighting to reach full OSI implementation. Admittedly, there might have been more question about this a couple of years ago, but now it is quite clear that TCP/IP as a protocol is the de facto standard in the United States, and full OSI does not seem any more likely to be implemented in Europe.

OSI implementors are debating the merits of ThinOSI, minimal OSI, and alternate OSI layers; full OSI implementation is just not reality. In fact, one of the recent messages to the ZIG discussion list was a proposal for alternate OSI layers. When the authors finally acknowledge that libraries are at the mercy of what other organizations are doing in this regard, they only manage to complete the confusion of the beginning reader.

In short, as background for OSI and for project descriptions, this report is fine; let's hope its readers care enough about the subject to continue their OSI education on their own.

Notes:

1. Library Hi Tech Journal. Ann Arbor, MI: Pierian Press, 1983-.
2. Information Standards Quarterly. Bethesda, MD: National Information Standards Organization, 1989-.

Pat Ensor (LIB38@jetson.uh.edu (mailto:LIB38@jetson.uh.edu)) is a member of the editorial board of TER and currently Acting Assistant Director for Public Services, University of Houston Libraries. She has been the editor of Information Standards Quarterly since 1991, and has spoken and written on Z39.50. She has also been the editor of the "CD-ROM Librarian" section of Computers in Libraries. She speaks and writes in a variety of places about electronic information topics.

Universal Access: Ubiquity or Arrogance?

by Thomas C. Wilson

I have always believed in questioning assumptions, and I think it's time to do that with the concept of access to the Net, or whatever it is being called this month--NREN, NII, Information Superhighway, Infobahn, etc. As more and more service provider companies are getting on the network bandwagon, we are being sold a bill of goods that includes great potential for human good, social and political equity, improved business opportunities, increased competitiveness, cleaner air, you name it! All of this "added value," of course, assumes that a significant portion, if not all, of the population of the U.S. has access to those amazing networked resources. Do we have ubiquity of network connectedness--are we even on the path to it--or are we just arrogantly fooling ourselves?

Networking Real People

So what about this concept of universal access to the soon-to-be- improved Internet? What does this really mean? Who has access now, and who does not? And what type of access? How do we move from a rather strident, intellectual community--let's face it, that's what we are today--to a network of "real" people? My mechanic? The folks in the rural community where I grew up to whom reliable voice phone service remains but a dream? The millions of people who use microelectronics daily, but still don't have convenient access to a "computer"? The millions of people who don't read about such new-fangled networks in the Wall Street Journal or New York Times? What type of access are these people going to get? And what value will it have to them?

Just because I have a connection doesn't mean I know what to do with it or that it is useful for me. To some degree we are trying to manufacture a need--a wonderful marketing invention! What is useful for a researcher is not necessarily so for an average citizen. Manufactured need will not suffice to motivate "real" people to connect, nor to maintain a long-term information market. Network access still has a "gadget" feel to it. That is to say that the people who like to fiddle with new toys enjoy it and hail its immense value. Others may find it yawningly interesting; still others don't get it at all.

Certainly the use and value of the Net has grown, and for many it is an integral part of professional activities, if not existence. But the ubiquity remains to be seen. It is still easier, cheaper, and more productive for me to buy the necessities of life from local stores, rather than from online services, even though I have

ready access to these services. Much of the information I need for daily life, including my profession, is still more cost-effectively and quickly procured through less elaborate means.

We could easily get into a "chicken and egg" argument about the relative importance of useful applications or access to the technology. But that exercise seems pointless in that both are needed. And yes, the number of applications, databases, directories, tools, resources, etc. is growing constantly. But I'm not talking about users in the scientific, research, education, and big business markets. I'm talking about the owner of the corner dry cleaners, the pizza delivery dude, my retired aunts and uncles- -"real" people. The perceived value of these gadgets must exceed their cost for "real" people to connect.

And speaking of cost, what will it be and how will it be determined? The models that appear most functional from the average citizen's perspective come from existing cable TV and local phone services. These generally include a base service connect fee and perhaps some additional charges for added services (e.g., special movie channels or enhanced voice phone services). These base service fees are, however, usually in the $10-$20 per month range. Will we be able to integrate voice phone, cable TV, and network service into one monthly payment approximating this range? It seems apparent that such a range could only be achieved if the services are regulated, highly and openly competitive, or some combination of the two. The personal online services industry (e.g., America Online, CompuServe, Prodigy, etc.) has moved to a pricing structure that includes non-metered access to many services for a base fee. Of course, there will always be premiums paid for some services. And then there is the question of what I need to be able to jack into the Metaverse.

Open Environments

One of the things that has made the Internet such a hot-bed of free-thinking innovation is that the development environment is completely open. Thousands of minds can approach a problem from different perspectives and create varied tools that will work for the Internet masses precisely because the underlying protocols are published, well-known, and not platform specific. It is illustrative to remember that most, if not all, of the creative Internet tools we use regularly were originally developed in the public domain or shareware arenas. Sure, some have become commercial enterprises, but many remain freely available. Individuals or small groups of individuals saw a need for something, had the time and motivation, and developed a solution.

On the data side of the software, many thousands of people have taken the time to mount resources on hosts that have a few spare cycles, because the information was useful and they wanted to share it. In many cases, this volunteer effort has filled numerous FTEs worth of person-power spread over countless organizations. Imagine what it would be like to cut off this energy either because of the use of unpublished, proprietary protocols or development environments, or because of host-end fees for services delivered.

And speaking of delivering services, what devices are people going to use to travel the Information Superhighway? With all the emphasis on who's going to cable the planet and who ought to be providing which information service, we may be ignoring a significant challenge before us. Who offers what has many implications for how the information is delivered. Clearly, some vendors have already articulated their visions of future data terminating equipment. Assuming for the moment that all of us do get a cable of some ilk connected to our homes, what type of device will be connected to the end of the cable? Will services be delivered to an enhanced TV? A totally new TV-like device? A microcomputer? Will the totality of the service be delivered through one medium or several? And fundamentally the most important question, will we have a choice in how the service is delivered and what type of device is used? Having five hundred cable channels, interactive banking, or remote refrigerator and microwave oven control still does not mean we

have freedom of choice. Will all, or almost all, services be available through multiple pipelines and devices? If so, that's competition. If not, it quickly becomes monopolistic control. And in no way can single sources of ideas complete with open environments of creativity.

Choice and Competition in a Technological Context

I'd like to suggest that our vision has been shaped by a glorified image of electronic life as it is now. Some of us have implied that up to this point things have been bleak, but the future will be much brighter; others have suggested that our electronic culture has been pristine, and the future is likely to be polluted. I think that reality is somewhere in between. Yes, indeed, there are some wonderful resources online, and some of us even get to access these goodies both from work and home. However, even the information "haves" are under some pretty hefty limitations as it stands now, and there appears to be no end to this in sight.

For example, consider cable TV--how many of you can choose your local provider? And how many of you can select which channels you really want delivered? Only fairly recently have we had the ability to select a long distance carrier for voice service. We are still limited in selecting local telephone service. How might this impact access to the Information Superhighway? It is possible that with the model of exclusive business contracts we have in our past, that the service providers will continue to determine what is delivered to our homes, not we as consumers. It is also possible that the information may be delivered, but for lack of specific equipment, we are not able to receive it. I recently returned from a short get-away and was reminded of this situation from another industry. On airline X, I can have only one company's version of a diet cola. Where is choice? We are being told that the major limitation on choice in information delivery has been bandwidth, and to some degree, that fact is a technical reality that may soon be overcome. But as long as we have a diversified business climate (i.e., one company operates in multiple industries) and exclusive distribution contracts, the consumer will not have choice.

So what will the future hold? Truth told, none of us knows for sure. One likely scenario for the near-term is that we will have a highly fractured information infrastructure in that multiple "networks" will be developed with few interconnections. Sound familiar? It's exactly what we have had in the past! I think it would be truly sad to spend years and mega-bucks only to develop something no better than what we have now. In 1979 I was able to perform personal banking via a widely-available technology, and one that most everyone on the planet knew how to use--the telephone. During the mid to late 1970's, interactive cable TV was tested in selected markets. So shouldn't we expect something more, new, or different after spending all this money? And shouldn't we expect to have "it" delivered through a variety of mechanisms from which we can choose?

So what does "universal access" mean? Let's face it, nowhere near a majority of the population has access to the Net now. Yes, those with Net access form a rapidly growing virtual populace, but we have a long way to go. And for those who do have access to the Net, there is great variance in what they can do in terms of their skills and the technologies at their disposal (i.e., the tools and the connections available). As we move through this endeavor, I want more than what we have now or have had in the past. And for me, that means more people fully online, more services available, and more players in the marketplace--in other words, ubiquity. I encourage you to join the cause in making sure that happens technically, politically, socially, and economically.

Tom Wilson, Editor-in-Chief TER, TWilson@uh.edu (mailto:TWilson@uh.edu)

document or any part of it for commercial distribution, address requests to the author at TWilson@uh.edu (mailto:TWilson@uh.edu).

About TER